YUKON WATER BOARD

Pursuant to the *Waters Act* and *Waters Regulation*, the Yukon Water Board hereby grants a Type B water use licence for placer mining undertaking to:

Bradley Gemmer
9060-24th Street
Edmonton, AB T6P 1X8

LICENCE NUMBER: PM10-004

LICENCE TYPE: B **UNDERTAKING:** PLACER

WATER USE AREA: 03 Yukon **STREAM CLASSIFICATION:** IV

WATERSHED: Alsek River

LOCATION: Latitude: 60° 00' 40" N Longitude: 137° 08' 16" W

WATER SOURCE: Dollis Creek, a tributary of the Tatshenshini River

MAXIMUM QUANTITY: 12,000 cubic metres per day

EFFECTIVE DATE: The effective date of this licence shall be the date on which the signature of the Chairperson of the Yukon Water Board is affixed.

EXPIRY DATE: December 31, 2019

This licence shall be subject to the restrictions and conditions contained herein, and to the restrictions and conditions contained in the *Waters Act* and the *Waters Regulation* made thereunder.

Dated this 11 day of June, 2010.

Witness

Approved by:

Chairperson
YUKON WATER BOARD

PART A DEFINITIONS

"Act" means *Waters Act* and any amendments thereto.

"Application" means application for water use licence PM10-004 and placer mining land use approval AP10004 and any subsequent information presented to the Yukon Water Board up to the date of the Board's decision.

"Board" means the Yukon Water Board.

"Diversion" means any direct or indirect alteration of a portion, or all, of the water flowing in a course, route, bed, bank or boundaries of a river, stream, lake or watercourse.

"Inspector" means any person designated as an Inspector under the Act.

"Instream Reservoir" means any water impoundment structure, where water is collected and retained for use, which is constructed in a natural channel or in a diversion, and through which the entire creek flow may be directed at any time.

"Natural Boundary" means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water is so common and usual, and so long continued, as to mark upon the soil of the bed of the lake, stream or other body of water, a character distinct from that of the banks thereof, both in respect to vegetation and in respect to the nature of the soil itself. In addition, the best estimates of the edge of dormant or old side channels and marsh areas are considered to be natural boundaries.

"Regulation" means the *Waters Regulation.*

"Spring Freshet" means the sudden increase in flow carried by a stream as snowmelt occurs at higher elevations in the watershed.

"Waste" means any substance as defined in the Act.

"Watercourse" means any stream, lake, pond, river, creek, spring, ravine or swamp, whether ordinarily containing water or not.

"Work Areas" means any area disturbed and/or altered by mining activities, excluding any stable diversion channel.

PART B WATER USE AND WASTE DEPOSIT

1. The Licensee is hereby authorized to:

   a) obtain water from Dollis Creek at a maximum quantity of 12,000 cubic metres per day; and

   b) use this water for a placer mining undertaking on the following grant numbers

P 42293	P 46992	P 47226	P 47229	P 47291
P 42294	P 47000	P 47227	P 47230	P47338
P 46991	P 47116	P 47228	P 47246; and	

   c) return a flow of water to Dollis Creek, and to deposit waste into Dollis Creek and groundwater; and

   d) construct Instream Reservoirs and stream channel Diversions on Dollis Creek.

2. All of the activities authorized in Part B (1) shall be as described in the Application and subject to the conditions of this licence. Where there is a discrepancy between the Application and the conditions of this licence, then the conditions of this licence shall prevail.

3. All work authorized by this licence shall occur on property that the Licensee has the right to enter upon and use for that purpose.

4. Effluent Quality Standard: Any grab sample at the point of discharge from the final settling facility shall not exceed suspended solids of 200 milligrams per litre above levels in the Watercourse immediately above the uppermost mine operation.

5. Except as otherwise authorized by this licence, the Licensee shall not deposit, or permit the deposit of waste containing:

   a) anything toxic to fish;

   b) floating solids;

   c) visible oil or grease; or

   d) a total concentration of mercury in excess of 0.005 milligrams per litre;

   into a receiving Watercourse, or in any place, under conditions where such waste, or any other waste that results from the deposit of such waste, if resulting waste contains any of the items prohibited by this paragraph, may enter the receiving Watercourse.

6. Except as authorized by this licence, no Waste shall enter any Watercourse as a result of any operation carried out by the Licensee.

7. Fuels, lubricants, cleansers, solvents and similar chemicals or substances shall be used, transported, stored and disposed of in such a way that said substances are not deposited in, or allowed to be deposited in, waters.

PART C MINING ACTIVITIES

8. Instream Reservoir and stream channel Diversions may be constructed. The Instream Reservoirs and overflow spillways shall be constructed and maintained to withstand and convey at least a 1:2 year flood flow.

9. A plug shall be left in place when constructing the Diversions at the upstream end and the downstream end until the Diversions are completed.

10. After the Diversions have been completed, the Licensee shall first remove the plug at the downstream end of the Diversions and then gradually remove the plug at the upstream end of the Diversion.

11. Armoring shall be installed at both the upstream and downstream ends of the Diversions.

12. Prior to the opening of the Diversion channel, the sump for the pump shall be constructed at the downstream end of the Diversion.

13. Armoring shall be installed at the confluence of the intake ditch and the creek.

14. All instream earthworks, Diversions, ditches, spillways and any other water related structures built, or otherwise constructed, for the storage or conveyance of water shall be able to withstand seasonal floods.

15. All storage and settling facilities and associated spillways, drains and water supply ditches located outside the Watercourse channel shall be of adequate capacity and construction.

16. All works associated with the undertaking, including, but not limited to, all dams, weirs, spillways, stream crossings, ditches, gates, water intakes, culverts and settling facilities shall be maintained in good repair.

17. A protective berm shall be constructed and maintained along the Watercourse channel Diversions.

18. Settling facilities shall be provided for all mining wastewater.

19. Available overburden shall be stockpiled for use in future site restoration, and such stockpiles shall be located where they will not adversely affect water quality in any Watercourse.

20. The Licensee shall provide barriers consisting of fish guards, screens, coverings or nets on all water intakes as follows:

    a) Screens or nets shall have a minimum of 3.5 openings per centimeter and openings no greater than 3.2 millimetres along any given side.

    b) If a punch plate or similar material is used, openings shall be no greater than 3.2 millimetres in length or width.

    c) There shall be no less than 929 square centimeters of open screen for every 205 litres per minute being withdrawn.

    d) The barriers shall be monitored and maintained to ensure that they function effectively at all times when water is being withdrawn.

    e) The barriers shall be designed and installed in such a manner that the screen is submerged and a uniform flow is maintained through the total screen area.

    f) Water shall not be withdrawn when the barrier is removed for renewal, repair or inspection.

    g) The Licensee shall cease pumping or decanting and take remedial action if there is alteration the bed or bank of the Watercourse.

PART D WATERCOURSE CROSSINGS

21. The Licensee may modify the bed or banks of streams to allow fording of Dollis Creek. The number of fords shall be limited to those shown in the Application.

22. The Licensee shall adhere to the following conditions when fording Dollis Creek:

    a) all crossings shall be at a right angle to the Watercourse; and

    b) removal of vegetation adjacent to the crossings shall be minimized; and

    c) non-erodible materials shall be placed up the bank on both sides of the crossing to stabilize the banks; and

    d) the Watercourse crossing approaches shall be low and stable enough to support the vehicles and equipment; and

    e) the Watercourse shall be crossed on either a firm rock bottom or a coarse gravel bottom; and

    f) equipment crossing the Watercourse shall be mechanically sound and free of leaks; and

    g) the blade or bucket on equipment shall be left in a raised position when crossing the Watercourses.

23. The Licensee may ford the Tatshenshini River at the location described in exhibit 1.2 of the Application.

24. The Licensee shall adhere to the following conditions when fording Tatshenshini Creek:

a) Fording shall occur according to the Department of Fisheries and Oceans Canada Yukon Timing Window for stream crossings between May 15 and June 15 annually; and

b) all crossings shall be at a right angle to the Watercourse; and

c) equipment crossing the Watercourse shall be mechanically sound and free of leaks; and

d) the blade or bucket on equipment shall be left in a raised position when crossing the Watercourses.

PART E DIVERSION/CHANNEL CONSTRUCTION AND RESTORATION

25. The Licensee shall adhere to the following conditions regarding construction of all Diversions on Dollis Creek, redirection of the Watercourse into the original channel and restoration:

a) The Diversion channel width shall be no less than 6 metres.

b) The Diversion channel depth shall be no less than 1.3 metres.

c) The Diversion channel grade shall be between 0% and 10.0%.

d) The bed and banks of the Diversion channel shall be left in a stable condition.

e) The bed and banks of any tributary (gulch or pup) of Dollis Creek shall be left in a stable condition and shall be left in such a manner so that erosion is controlled and revegetation is possible.

f) Class 1 armouring shall be used, as directed in the attached Schedule I.

g) Topsoil and organic overburden or fines from washed tailings shall be spread on the graded areas on both sides of the restored channel.

h) Active revegetation measures are required on at least one side of the restored channel.

PART F SEASONAL CLOSURE

26. The Licensee shall comply with the following conditions pertaining to seasonal closure:

a) The mine site shall be left in a stable condition at the end of each mining season.

b) An Inspector shall be contacted not less than 2 weeks prior to seasonal closure.

c) To prevent flood damage during freshet, the water reservoir shall be drained, the settling facilities shall be dewatered, instream dams and dikes shall be breached and the Diversion ditches shall be constructed and maintained to withstand and convey flood flows.

d) Spring Freshet shall not be routed through Work Areas. Where Diversion channels around working areas are built or excavated, they shall be open in preparation for Spring Freshet.

e) All mined or otherwise disturbed ground surfaces, including cut banks, fill slopes and tailings piles shall be stabilized annually to prevent erosion and surface runoff from carrying sediment into adjacent Watercourses.

PART G DECOMMISSIONING

27. Prior to final decommissioning and/or expiry of this licence, the Licensee shall:

a) ensure that the final creek channel approximates its pre-licence condition in length, gradient and stability, except as may otherwise be required in this licence; and

b) ensure that all dams and dikes across stream channels are removed; and

c) contact an Inspector not less than 2 weeks prior to final decommissioning.

PART H REPORTS, SAMPLING AND ANALYSIS

28. Where there is a surface discharge from the settling facilities, the Licensee shall take weekly samples at a point upstream of the water supply intake and at the point of discharge from the final settling facility, and shall analyze these samples for settleable solids using the Imhoff cone 1 hour test.

29. Where no discharge from the settling facility to a Watercourse occurs, whether by surface discharge or seepage, no sampling is required.

30. On or before the anniversary of the date of issuance of this licence, and for each year during which this licence is in effect, the Licensee shall submit an annual report to the Board.

31. Annual reports during the year reported shall include the information required by this licence and by the Regulation including, but not necessarily limited to:

a) the quantity of water used under this licence; and

b) the quantity, concentration and type of any waste deposited under this licence; and

c) all data collected which is required by this licence; and

d) a description of the reclamation that has taken place; and

e) a list of grant numbers of claims where any reclamation has taken place.

PART I GENERAL CONDITIONS

32. The expiry date of this licence shall be December 31, 2019.

33. Sewage, including all human excreta and wastewater associated with daily camp operations, shall be disposed of in accordance with the Public Health and Safety Act of the Yukon.

34. The location of subsurface grey water pits and/or pit privies shall be not less than 30 metres from the high water mark of any Watercourse, and at least 1.2 metres above bedrock or the water table.

35. If very permeable soils are encountered, the pit privy or grey water pit shall be lined with 0.6 metres of sand or silt.

36. All garbage and refuse shall be kept in a covered container until removed from the site or, where appropriate, incinerated and buried under not less than 1 metre of compacted soil in pits located not less than 30 metres from the Natural Boundary of any Watercourse.

37. The Licensee shall immediately contact the 24-hour Yukon Spill Report number (867) 667-7244, and implement the Spill Contingency Plan should a spill or unauthorized discharge occur. A detailed written report on any such event including, but not limited to, dates, quantities, parameters, causes and other relevant details and explanations shall be submitted to the Board no later than 10 days after its occurrence.

38. No condition of the water use licence limits the application of any federal, territorial, or first nation legislation.

39. In the event that the Licensee fails to comply with any provision or condition of this licence, the Board may, subject to the Act, cancel the licence.

40. Where any direction, notice, order or report under this licence is required to be in writing, it shall be given:

    a) to the Licensee, if delivered, faxed or mailed by registered mail, to the following address:

    Bradley Gemmer
    9060-24th Street
    Edmonton, AB T6P 1X8

    Fax #: (780) 449-0001

    and shall be deemed to have been given to the Licensee on the day it was delivered or faxed, or 7 days after the day it was mailed, as the case may be; or

b) to the Board, if delivered, faxed or mailed by registered mail, to the following address:

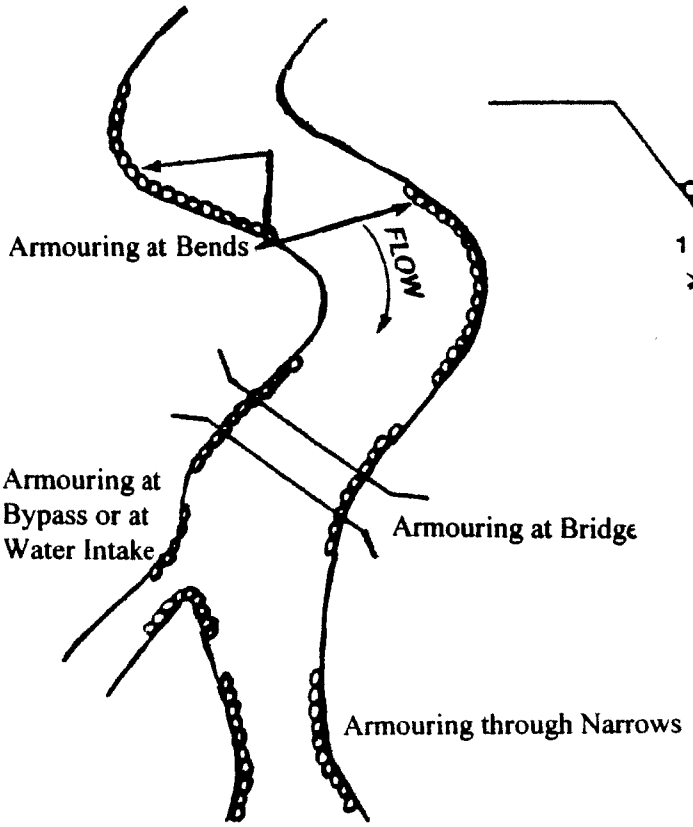
Yukon Water Board
Suite 106, 419 Range Road
Whitehorse, YT Y1A 3V1

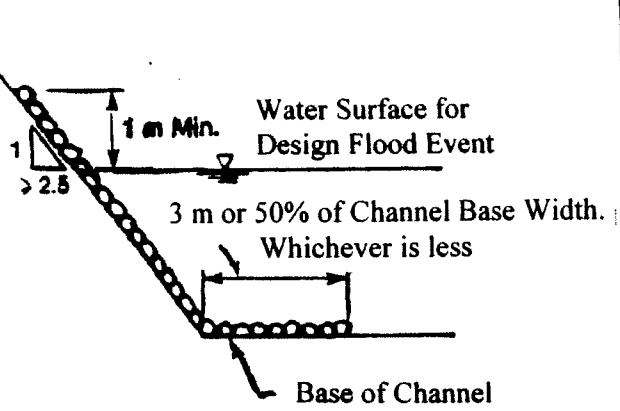
Fax #: (867) 456-3890

and shall be deemed to have been given to the Board on the day it was delivered or faxed, or 7 days after the day it was mailed, as the case may be.

c) The Board or the Licensee may, by notice in writing, change its address for delivery.

SCHEDULE 1





NOTE:

- Trees and brush may be used on Type IV streams as shown on Figure 10 if armouring material is unavailable. Following Field evaluations, this technique may be deemed acceptable for Stream Types II and III.

PURPOSE:

- To control bank erosion at bends or curves, at bridge approaches and through channel narrows.

DESIGN:

- Channel armouring should extend from the base of the channel to at least 1 m above the water surface (depth of flow) for the design flood event.
- Armouring should extend beyond the toe of the channel bank along the base of the channel 3 m or 50% the base width of the channel, whichever is less.
- The bank or channel side slopes should be no steeper than 2.5H:1V where the bank is to be armoured.
- Use the following table to determine what size of armouring material should be used.

SUGGESTED STONE SIZES FOR ARMOURING MATERIAL

	Riprap Class					
	1		2		3	
	mm	inches	mm	inches	mm	inches
Maximum Stone Size	450	18	800	32	1200	47
Average Stone Size	300	12	500	20	800	32
Velocity	< 3 m/s		3 to 4 m/s		4 to 4.7 m/s	

CONSTRUCTION:

- Place Material on bank using available equipment.
- Ensure that there is a fairly uniform mix of armour material sizes on bank.

ARMOURING TECHINIQUES